

Fieldbus Appendix

AnyBus-S FIPIO

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Revision	Date	Author	Chapter	Description
1.00	2003-02-14	PeP	All	First release

Conventions used in this manual

The following conventions are used throughout this manual:

- Numbered lists provide sequential steps
- Bulleted lists provide information, not procedural steps
- The term ‘module’ is used when referring to the AnyBus module
- The term ‘application’ is used when referring to the hardware that is connected to the AnyBus Application Connector
- Hexadecimal values are written in the format NNNNh, where NNNN is the hexadecimal value.
- Commands instructs the module to perform certain task
- Functions are commands that returns data

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About the AnyBus-S FIPIO

The AnyBus-S FIPIO integrates all the analog and digital functionality required to communicate over a FIPIO based fieldbus network, and can be customised to appear as a vendor specific implementation rather than a generic AnyBus-S module.

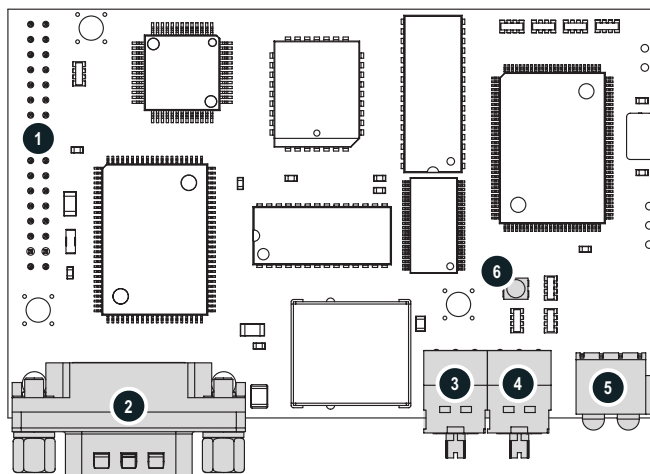
Features

- Identity customization
- Supports all FIPIO profiles and classes
- Node address configuration using on board switches or via the application interface
- Supports both FIP and WorldFIP standards

Compatible Products

This product is a member of the AnyBus concept of interchangeable fieldbus modules. This makes it fully interchangeable with any fieldbus system supported by the AnyBus-S platform.

Overview



#	Description
1	Application Connector
2	Fieldbus Connector
3	Node address switch x10
4	Node address switch x1
5	Status Indicators
6	AnyBus Watchdog LED

Connectors

Application Connector

The application connector features a standard AnyBus-S 2kbyte parallel DPRAM interface. For further information, please consult the general AnyBus-S Design Guide.

FIPIO Connector

The module supports both dsub and board to board connectors on the fieldbus interface. The standard connector is a male 9 pin dsub connector.

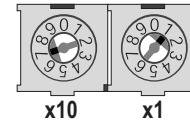
For more information about connectors and pin assignments, see Appendix A-1 “Connectors”

Node Address Switches

These switches can be used to set the node address in the range 0 - 99. The switches are read once during startup, i.e. if the setting is changed, the module requires a reset for the change to have effect. Node addresses in the range 0 - 255 can be set using the mailbox command SET_NODE_ADDRESS, see 3-2 “Set Node Address (SET_NODE_ADDRESS)”.

Example:

In the following example, the node address switches form address 71. ($7 \times 10 + 1 \times 1 = 71$)



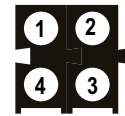
Indicators

AnyBus Watchdog

Consult the general AnyBus-S Design Guide for further information.

Status Indicators

These leds indicate run time status and errors to the user.



Led	State	Description
1 - Run Led	Green	Normal operation (Device powered up and operating)
	Off	Device not powered or major failure (no communication)
2 - Err Led	Red	Major unrecoverable fault
	Flashing Red	Bus not connected or promptness timeout
	Off	Not powered or device operating normally
3 - I/O Led	Red	External device error
	Off	Device operating normally
4 - COM Led	Flashing Yellow	Bus activity
	Off	No bus activity
All	Flashing	Module not initialised

Basic Operation

Node Address Configuration

The node address of the module can be set either via hardware switches on the front of the module or using the mailbox command 'SET_NODE_ADDRESS'. It is also possible to read the state of the switches, allowing the application to manipulate the switch value before initialisation (see 3-3 "Read Switch Setting (READ_SWITCH_SETTING)").

Node address restrictions:

- Node address 0 is reserved for the fieldbus control system (e.g. the PLC)
- Node address 63 is reserved for configuration and diagnostic terminals
- Addresses 1 - 62 are used for connecting industrial peripheral devices to FIPIO. These devices must be declared in the remote I/O configuration of the PLC that controls the process.
- Addresses 64 - 255 can only be used if supported by the fieldbus control system.

Baud Rate

The baud rate is fixed to the standard FIPIO baudrate 1Mbit/s.

Identity Customization

The module can be customized to appear as a vendor specific implementation rather than a generic AnyBus-S module. This is done using the mailbox command SET_IDENT_INFO (see 3-13 "Set Identification Info (SET_IDENT_INFO)").

The following information can be changed:

- **Vendor Name:** Name of the manufacturer of the product (20 characters)
- **Model Name:** Name of the model of the device (20 characters)

By default, the module identifies itself as follows:

- **Vendor Name:** HMS Ind. Networks
- **Model Name:** AnyBus-S FIPIO

Status Handling

Standard Status Byte

The Standard Status byte is used to signal status information to the FIPIO master. All bits in the Standard Status byte except bit 6 are available to the application, see 3-12 "Set Standard Status (SET_STANDARD_STATUS)".

Specific Status Buffer (FEDP profile only)

In the FEDP profile there are 16 bytes available for sending specific status. The meaning of the data has to be defined for each device. The application can access the specific status buffer using the SET_SPECIFIC_STATUS command.

Profiles and Classes

The module supports all standard FIPIO profiles and classes. The profile and class determines the size of the I/O area. The available profiles and classes are described below.

FRDP - FIPIO Reduced Device Profile

	Class 0:	Class 1:	Class 2:
Data processed: - Reading of inputs - Controlling of outputs	2 words 2 words	2 words 2 words	2 words 2 words
Configuration:	-	-	16 words
Adjustment:	-	-	32 words
Commands: - Standard command - Specific command	- -	1 byte -	1 byte -
Diagnostics: - Standard status - Specific status	1 byte -	1 byte -	1 byte -

FSDP - FIPIO Standard Device Profile

	Class 0:	Class 1:	Class 2:
Data processed: - Reading of inputs - Controlling of outputs	8 words 8 words	8 words 8 words	8 words 8 words
Configuration:	-	-	16 words
Adjustment:	-	-	32 words
Commands: - Standard command - Specific command	- -	1 byte -	1 byte -
Diagnostics: - Standard status - Specific status	1 byte -	1 byte -	1 byte -

FEDP - FIPIO Extended Device Profile

	Class 0:	Class 1:	Class 2:
Data processed: - Reading of inputs - Controlling of outputs	32 words 32 words	32 words 32 words	32 words 32 words
Configuration:	-	-	30 words
Adjustment:	-	-	30 words
Commands: - Standard command - Specific command	- -	1 byte 8 words	1 byte 8 words
Diagnostics: - Standard status - Specific status	1 byte 8 words	1 byte 8 words	1 byte 8 words

Parameter Data Handling

The application must poll bits 1, 2 and 3 in the Fieldbus Specific Area (see 4-1 “Fieldbus Specific Area (0x640 - 0x7BF)”) periodically to see if any new parameter data has been received by the module.

If new parameter data has been received, the application should read and evaluate it, and then either accept or reject it using the appropriate mailbox command.

There are three types of parameter data:

- Command Data
- Adjustment Data
- Configuration Data

(Consult the FIPIO documentation for more information)

Command Data

Indication Bit: CNT

Related mailbox functions:

‘GET_SPECIFIC_COMMAND’

‘ACCEPT_SPECIFIC_COMMAND’

Adjustment Data

Indication Bit: ADJ

Related mailbox functions:

‘GET_ADJUSTMENT’

‘ACCEPT_ADJUSTMENT’

Configuration Data

Indication Bit: CNF

Related mailbox functions:

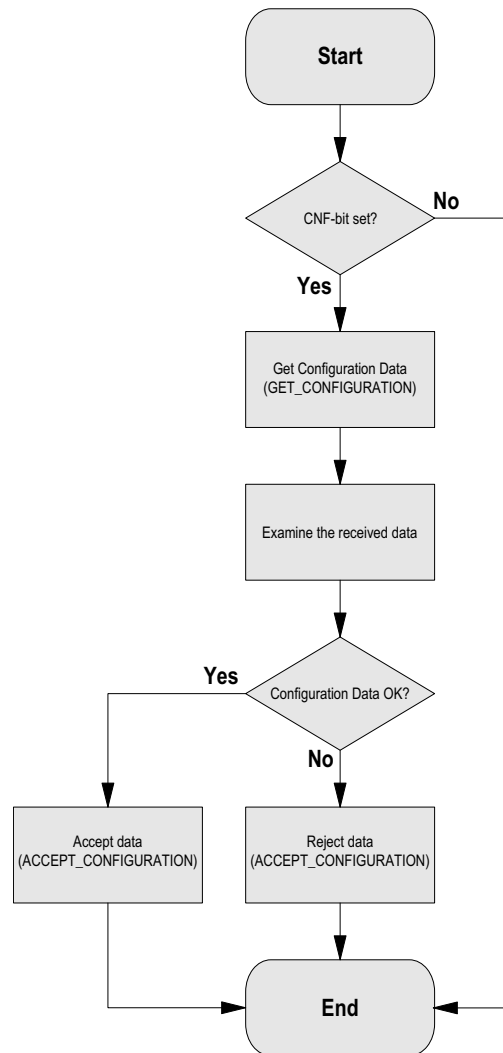
‘GET_CONFIGURATION’

‘ACCEPT_CONFIGURATION’

Note:

If no Configuration Data has been received/accepted, or if the configuration has been reset, the CE bit in the Fieldbus Specific Area will be set.

Flowchart Example: (Configuration Data)



Mailbox Interface

This chapter describes the fieldbus specific mailbox commands in the module. Consult the AnyBus-S Design Guide for more information regarding mailbox functionality.

Fault and Status Information

When a mailbox command cannot be processed the Message Information register in the header of the response will indicate that an error occurred. Consult the AnyBus-S Design Guide for more information.

If the error code is 'Invalid Other' (Fh), extended error information is available in the Fault Information register (Extended word 8).

The fault codes in the Fault Information register are:

Register Value	Name	Description
0001h	Invalid Profile	Invalid FIPIO Profile
0002h	Invalid Class	Invalid FIPIO Class
0003h	No data available	No data available

Basic Settings

Set Node Address (SET_NODE_ADDRESS)

Description

This command is used to set the node address. If this command is sent, the physical switch setting will be ignored.

Note: This command can only be sent during module initialisation.

Parameter	Description
Command initiator	Application
Command Name	SET_NODE_ADDRESS
Message type	02h
Command number	0001h
Fragmented	No
Extended Header data	-
Command data	Node address, range 0 - 255.
Response data	The response indicates if the command was accepted. The response data is a copy of the command data.

Command and response layout:

	Command	Expected response	
Message ID	(ID)	(ID)	
Message information	4002h	0002h	
Command	0001h	0001h	SET_NODE_ADDRESS
Data size	0001h	0001h	
Frame count	0001h	0001h	
Frame number	0001h	0001h	
Offset high	0000h	0000h	
Offset low	0000h	0000h	
Extended word 1	-	-	
Extended word 2	-	-	
Extended word 3	-	-	
Extended word 4	-	-	
Extended word 5	-	-	
Extended word 6	-	-	
Extended word 7	-	-	
Extended word 8	-	-	
Message data byte 1	Node Address	Node Address	Range 0 - 255

Read Switch Setting (READ_SWITCH_SETTING)

Description

This function returns the physical setting of the node address switches.

Parameter	Description
Command initiator	Application
Command Name	READ_SWITCH_SETTING
Message type	02h
Command number	0002h
Fragmented	No
Extended Header data	-
Command data	-
Response data	Switch setting. The response indicates if the command was accepted.

Command and response layout:

	Command	Expected response	
Message ID	(ID)	(ID)	
Message information	4002h	0002h	
Command	0002h	0002h	READ_SWITCH_SETTING
Data size	0000h	0001h	
Frame count	0001h	0001h	
Frame number	0001h	0001h	
Offset high	0000h	0000h	
Offset low	0000h	0000h	
Extended word 1	-	-	
Extended word 2	-	-	
Extended word 3	-	-	
Extended word 4	-	-	
Extended word 5	-	-	
Extended word 6	-	-	
Extended word 7	-	-	
Extended word 8	-	-	
Message data byte 1		Switch setting	

Set Profile and Class (SET_PROFILE_CLASS)

Description

This command sets the FIPIO profile and class. The FIPIO profile limits the number of I/O bytes that can be used, and the class affects configuration data etc. (Consult the FIPIO Standard Profiles Reference Manual for more information about profiles and classes). It is not possible to initialise the module with more I/O than the profile supports. The default setting is profile FEDP, class 0.

(See 2-2 “Profiles and Classes” for more information about the available profiles and classes)

Note: This command can only be sent during module initialisation.

Parameter	Description
Command initiator	Application
Command Name	SET_PROFILE_CLASS
Message type	02h
Command number	0003h
Fragmented	No
Extended Header data	Extended fault information may be returned in the header of the response.
Command data	FIPIO Profile & Class
Response data	The response indicates if the command was accepted. The response data is a copy of the command data.

Command and response layout:

	Command	Expected response	
Message ID	(ID)	(ID)	
Message information	4002h	0002h	
Command	0003h	0003h	SET_PROFILE_CLASS
Data size	0002h	0002h	
Frame count	0001h	0001h	
Frame number	0001h	0001h	
Offset high	0000h	0000h	
Offset low	0000h	0000h	
Extended word 1	-	-	
Extended word 2	-	-	
Extended word 3	-	-	
Extended word 4	-	-	
Extended word 5	-	-	
Extended word 6	-	-	
Extended word 7	-	-	
Extended word 8	-	Fault information	Extended fault information
Message data byte 1	Profile	Profile	FIPIO Profile
Message data byte 2	Class	Class	FIPIO Class number

- **Profile**
FRDP = 0x06, FSDP = 0x00, FEDP = 0x02
- **Class**
Class 0 = 0x00, Class 1 = 0x01, Class 2 = 0x02

Configuration Data

Get Configuration (GET_CONFIGURATION)

Description

This function returns the received configuration data. New configuration data is indicated in the fieldbus specific area. When new configuration data has been read and verified by the application, it must be accepted or rejected by sending the ACCEPT_CONFIGURATION command. (For more information, see 2-3 “Parameter Data Handling”)

Notes: This function can only be used when the module has been initialised as a Class 2 module. If no new configuration data is available, the response will contain extended error information.

Parameter	Description
Command initiator	Application
Command Name	GET_CONFIGURATION
Message type	02h
Command number	0006h
Fragmented	No
Extended Header data	Extended fault information may be returned in the header of the response.
Command data	-
Response data	The response contains the new configuration data.

Command and response layout:

	Command	Expected response	
Message ID	(ID)	(ID)	
Message information	4002h	0002h	
Command	0006h	0006h	GET_CONFIGURATION
Data size	0000h	(NN bytes of data)	Size depends on FIPIO profile
Frame count	0001h	0001h	
Frame number	0001h	0001h	
Offset high	0000h	0000h	
Offset low	0000h	0000h	
Extended word 1	-	-	
Extended word 2	-	-	
Extended word 3	-	-	
Extended word 4	-	-	
Extended word 5	-	-	
Extended word 6	-	-	
Extended word 7	-	-	
Extended word 8	-	Fault information	Extended fault information
Message data byte 1		Configuration data byte 1	
...		...	
Message data byte n		Configuration data byte NN	

Profile & Class	Message Data Size / Configuration Data Size
FRDP, Class 2	16 words (32 bytes)
FSDP, Class 2	16 words (32 bytes)
FEDP, Class 2	30 words (60 bytes)

Accept Configuration (ACCEPT_CONFIGURATION)

Description

This command is used to accept or reject a configuration previously received using the GET_CONFIGURATION function. (For more information, see 2-3 “Parameter Data Handling”)

Parameter	Description
Command initiator	Application
Command Name	ACCEPT_CONFIGURATION
Message type	02h
Command number	0009h
Fragmented	No
Extended Header data	Extended fault information may be returned in the header of the response.
Command data	Flag indicating whether the configuration shall be accepted or rejected
Response data	The response indicates if the command was accepted. The response data is a copy of the command data.

Command and response layout:

	Command	Expected response	
Message ID	(ID)	(ID)	
Message information	4002h	0002h	
Command	0009h	0009h	ACCEPT_CONFIGURATION
Data size	0001h	0001h	
Frame count	0001h	0001h	
Frame number	0001h	0001h	
Offset high	0000h	0000h	
Offset low	0000h	0000h	
Extended word 1	-	-	
Extended word 2	-	-	
Extended word 3	-	-	
Extended word 4	-	-	
Extended word 5	-	-	
Extended word 6	-	-	
Extended word 7	-	-	
Extended word 8	-	Fault information	Extended fault information
Message data byte 1	Accept / Reject	Accept / Reject	

- Accept / Reject

01h: Accept configuration data

00h: Reject configuration data

Adjustment Data

Get Adjustment Data (GET_ADJUSTMENT)

Description

This function returns the received adjustment data. New adjustment data is indicated in the fieldbus specific area. After the adjustment data has been read and verified by the application, it must be accepted or rejected by sending an ACCEPT_ADJUSTMENT mailbox command. (For more information, see 2-3 “Parameter Data Handling”)

Note: This function can only be used when the module has been initialised as a Class 2 module. If no new adjustment data is available, the response will contain extended error information.

Parameter	Description
Command initiator	Application
Command Name	GET_ADJUSTMENT
Message type	02h
Command number	0007h
Fragmented	No
Extended Header data	Extended fault information may be returned in the header of the response.
Command data	-
Response data	The response contains the new adjustment data.

Command and response layout:

	Command	Expected response	
Message ID	(ID)	(ID)	
Message information	4002h	0002h	
Command	0007h	0007h	GET_ADJUSTMENT
Data size	0000h	(NN bytes of data)	Size depends on FIPIO profile
Frame count	0001h	0001h	
Frame number	0001h	0001h	
Offset high	0000h	0000h	
Offset low	0000h	0000h	
Extended word 1	-	-	
Extended word 2	-	-	
Extended word 3	-	-	
Extended word 4	-	-	
Extended word 5	-	-	
Extended word 6	-	-	
Extended word 7	-	-	
Extended word 8	-	-	
Message data byte 1		Fault information	Extended fault information
...		Adjustment data byte 1	
Message data byte n		...	
		Adjustment data byte NN	

Profile & Class	Message Data Size / Adjustment Data Size
FRDP, Class 2	32 words (64 bytes)
FSDP, Class 2	32 words (64 bytes)
FEDP, Class 2	30 words (60 bytes)

Accept Adjustment Data (ACCEPT_ADJUSTMENT)

Description

This command is used to accept or reject a configuration previously received using the GET_ADJUSTMENT function. (For more information, see 2-3 “Parameter Data Handling”)

Parameter	Description
Command initiator	Application
Command Name	ACCEPT_ADJUSTMENT
Message type	02h
Command number	000Ah
Fragmented	No
Extended Header data	Extended fault information may be returned in the header of the response.
Command data	Flag indicating whether the configuration shall be accepted or rejected
Response data	The response indicates if the command was accepted. The response data is a copy of the command data.

Command and response layout:

	Command	Expected response	
Message ID	(ID)	(ID)	
Message information	4002h	0002h	
Command	000Ah	000Ah	<i>ACCEPT_ADJUSTMENT</i>
Data size	0001h	0001h	
Frame count	0001h	0001h	
Frame number	0001h	0001h	
Offset high	0000h	0000h	
Offset low	0000h	0000h	
Extended word 1	-	-	
Extended word 2	-	-	
Extended word 3	-	-	
Extended word 4	-	-	
Extended word 5	-	-	
Extended word 6	-	-	
Extended word 7	-	-	
Extended word 8	-	Fault information	<i>Extended fault information</i>
Message data byte 1	Accept / Reject	Accept / Reject	

- **Accept / Reject**

01h: Accept adjustment data

00h: Reject adjustment data

Command Data

Get Specific Command (GET_SPECIFIC_COMMAND)

Description

This function returns the received specific command (FEDP Class 1 & 2 only). New specific command data is indicated in the fieldbus specific area. After a specific command has been read and checked, it must be accepted or rejected by sending an ACCEPT_SPECIFIC_COMMAND mailbox command. (For more information, see 2-3 “Parameter Data Handling”)

Note: The specific command data comes from the FB_CONTROL variable, which is consumed by the device. This variable contains a byte called “validity of specific commands”. If this byte is zero, it means that a specific command data is not invalid and thus not considered to be received by the module.

Parameter	Description
Command initiator	Application
Command Name	GET_SPECIFIC_COMMAND
Message type	02h
Command number	0008h
Fragmented	No
Extended Header data	Extended fault information may be returned in the header of the response.
Command data	-
Response data	The response indicates if the command was accepted.

Command and response layout:

	Command	Expected response	
Message ID	(ID)	(ID)	
Message information	4002h	0002h	
Command	0008h	0008h	<i>GET_SPECIFIC_COMMAND</i>
Data size	0000h	0010h	<i>16 bytes of data (8 words)</i>
Frame count	0001h	0001h	
Frame number	0001h	0001h	
Offset high	0000h	0000h	
Offset low	0000h	0000h	
Extended word 1	-	-	
Extended word 2	-	-	
Extended word 3	-	-	
Extended word 4	-	-	
Extended word 5	-	-	
Extended word 6	-	-	
Extended word 7	-	-	
Extended word 8	-	Fault information	<i>Extended fault information</i>
Message data word 1	Specific Command word 1	Specific Command word 1	
Message data word 2	Specific Command word 2	Specific Command word 2	
...	
Message data word 8	Specific Command word 8	Specific Command word 8	

Accept Specific Command (ACCEPT_SPECIFIC_COMMAND)

Description

This command is used to accept or reject specific command data previously received using the GET_SPECIFIC_COMMAND function. (For more information, see 2-3 “Parameter Data Handling”)

Parameter	Description
Command initiator	Application
Command Name	ACCEPT_SPECIFIC_COMMAND
Message type	02h
Command number	000Bh
Fragmented	No
Extended Header data	Extended fault information may be returned in the header of the response.
Command data	Flag indicating whether the configuration shall be accepted or rejected
Response data	The response data contains a copy of the command data.

Command and response layout:

	Command	Expected response	
Message ID	(ID)	(ID)	
Message information	4002h	0002h	
Command	000Bh	000Bh	ACCEPT_SPECIFIC_COMMAND
Data size	0001h	0001h	
Frame count	0001h	0001h	
Frame number	0001h	0001h	
Offset high	0000h	0000h	
Offset low	0000h	0000h	
Extended word 1	-	-	
Extended word 2	-	-	
Extended word 3	-	-	
Extended word 4	-	-	
Extended word 5	-	-	
Extended word 6	-	-	
Extended word 7	-	-	
Extended word 8	-	Fault information	Extended fault information
Message data byte 1	Accept / Reject	Accept / Reject	

- Accept / Reject

01h: Accept specific command data

00h: Reject specific command data

Status Handling

Set Specific Status (SET_SPECIFIC_STATUS)

Description

Set the device specific status, only valid for the FEDP profile.

Parameter	Description
Command initiator	Application
Command Name	SET_SPECIFIC_STATUS
Message type	02h
Command number	0005h
Fragmented	No
Extended Header data	Extended fault information may be returned in the header of the response.
Command data	-
Response data	The response data contains a copy of the command data.

Command and response layout:

	Command	Expected response	
Message ID	(ID)	(ID)	
Message information	4002h	0002h	
Command	0005h	0005h	<i>SET_SPECIFIC_STATUS</i>
Data size	0010h	0010h	<i>16 bytes of data (8 words)</i>
Frame count	0001h	0001h	
Frame number	0001h	0001h	
Offset high	0000h	0000h	
Offset low	0000h	0000h	
Extended word 1	-	-	
Extended word 2	-	-	
Extended word 3	-	-	
Extended word 4	-	-	
Extended word 5	-	-	
Extended word 6	-	-	
Extended word 7	-	-	
Extended word 8	-	Fault information	<i>Extended fault information</i>
Message data word 1	Specific status word 1	Specific status word 1	
Message data word 2	Specific status word 2	Specific status word 2	
Message data word 3	Specific status word 3	Specific status word 3	
Message data word 4	Specific status word 4	Specific status word 4	
Message data word 5	Specific status word 5	Specific status word 5	
Message data word 6	Specific status word 6	Specific status word 6	
Message data word 7	Specific status word 7	Specific status word 7	
Message data word 8	Specific status word 8	Specific status word 8	

Set Standard Status (SET_STANDARD_STATUS)

Description

The module automatically uses the Standard Status bits to indicate run time errors to the FIPIO master. Using this command, the application can also access these bits. All bits except bit 6 are available to the application. (The meanings of these bits are described in the table below.)

Parameter	Description
Command initiator	Application
Command Name	SET_STANDARD_STATUS
Message type	02h
Command number	000Ch
Fragmented	No
Extended Header data	-
Command data	Standard status data
Response data	The response data contains a copy of the command data

Command and response layout:

	Command	Expected response	
Message ID	(ID)	(ID)	
Message information	4002h	0002h	
Command	000Ch	000Ch	SET_STANDARD_STATUS
Data size	0001h	0001h	
Frame count	0001h	0001h	
Frame number	0001h	0001h	
Offset high	0000h	0000h	
Offset low	0000h	0000h	
Extended word 1	-	-	
Extended word 2	-	-	
Extended word 3	-	-	
Extended word 4	-	-	
Extended word 5	-	-	
Extended word 6	-	-	
Extended word 7	-	-	
Extended word 8	-	-	
Message data byte 1	Standard Status byte	Standard Status byte	(bitfield, see below)

- Standard Status Byte

Bit	Name	Description
7	Application Fault	Incorrect control operation
6 ^a	Communication Fault	Communication is no longer operational
5	Hardware Configuration Fault	One of the device modules is not compatible with each other
4	Internal Fault	Hardware failure of the device
3	External Fault 1	Specific fault number 1 (External power supply fault)
2	External Fault 2	Specific fault number 2 (The terminal block is not connected)
1	External Fault 3	Specific fault number 3
0	External Fault 4	Specific fault number 4

a. This bit cannot be set by the application

Identification

Set Identification Info (SET_IDENT_INFO)

Description

This command is used to set the Vendor Name and Model Name of the module.

Parameter	Description
Command initiator	Application
Command Name	SET_IDENT_INFO
Message type	02h
Command number	0004h
Fragmented	No
Extended Header data	-
Command data	Vendor name and Model name. Both entries must be 20 characters long, pad with spaces if necessary.
Response data	The response data contains a copy of the command data

Command and response layout:

	Command	Expected response
Message ID	(ID)	(ID)
Message information	4002h	0002h
Command	0004h	0004h
Data size	0028h	0028h
Frame count	0001h	0001h
Frame number	0001h	0001h
Offset high	0000h	0000h
Offset low	0000h	0000h
Extended word 1	-	-
Extended word 2	-	-
Extended word 3	-	-
Extended word 4	-	-
Extended word 5	-	-
Extended word 6	-	-
Extended word 7	-	-
Extended word 8	-	-
Message data bytes 1 - 20	Vendor Name [1... 20]	Vendor Name [1 ... 20]
Message data bytes 21 - 40	Model Name [1 ... 20]	Model Name [1 ... 20]

SET_IDENT_INFO

Communication

Set Promptness Time (SET_PROMPTNESS_TIME)

Description

This command sets the maximum allowed time between received output data packets before the module times out and indicates off line. The default value is 256ms.

Note: This command can only be send during module initialisation.

Parameter	Description
Command initiator	Application
Command Name	SET_PROMPTNESS_TIME
Message type	02h
Command number	000Dh
Fragmented	No
Extended Header data	Extended fault information may be returned in the header of the response.
Command data	Promptness time (See explanation below)
Response data	The response data contains a copy of the command data

Command and response layout:

	Command	Expected response	
Message ID	(ID)	(ID)	
Message information	4002h	0002h	
Command	000Dh	000Dh	SET_PROMPTNESS_TIME
Data size	0001h	0001h	
Frame count	0001h	0001h	
Frame number	0001h	0001h	
Offset high	0000h	0000h	
Offset low	0000h	0000h	
Extended word 1	-	-	
Extended word 2	-	-	
Extended word 3	-	-	
Extended word 4	-	-	
Extended word 5	-	-	
Extended word 6	-	-	
Extended word 7	-	-	
Extended word 8	-	Fault information	Extended fault information
Message data byte 1	Promptness Time	Promptness Time	See explanation below

- Promptness Time**

01h: 32ms

02h: 64ms

03h: 256ms

04h: 1s

05h: 4s

Set Channel Fault (SET_CHANNEL_FAULT)

Description

This command sets the channel fault byte, the first byte in the APPLICATION_PROCESS_STATUS, produced by the module. A value of zero indicates that the input values are valid and can be used by the device consuming the variable. The default value is 0.

Parameter	Description
Command initiator	Application
Command Name	SET_CHANNEL_FAULT
Message type	02h
Command number	000Eh
Fragmented	No
Extended Header data	Extended fault information may be returned in the header of the response.
Command data	Channel Fault value
Response data	The response data contains a copy of the command data

Command and response layout:

	Command	Expected response	
Message ID	(ID)	(ID)	
Message information	4002h	0002h	
Command	000Eh	000Eh	SET_CHANNEL_FAULT
Data size	0001h	0001h	
Frame count	0001h	0001h	
Frame number	0001h	0001h	
Offset high	0000h	0000h	
Offset low	0000h	0000h	
Extended word 1	-	-	
Extended word 2	-	-	
Extended word 3	-	-	
Extended word 4	-	-	
Extended word 5	-	-	
Extended word 6	-	-	
Extended word 7	-	-	
Extended word 8	-	Fault information	Extended fault information
Message data byte 1	Channel fault value	Channel fault value	

Fieldbus Specific Registers

Fieldbus Specific Area (0x640 - 0x7BF)

This area provides status information from the FIPIO network.

Address	Register	Description
640h - 641h	FIP Received Data	Bitfield containing misc. status flags, see below.
642h - 7BFh	Reserved	Reserved, do not use

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
												CE	CNT	ADJ	CNF
0x640 (MSB)												0x641 (LSB)			

- **CE - Configuration Empty**

This bit indicates that no Configuration Data has been received/accepted, or that the configuration has been reset.

1: Configuration is empty

0: -

- **CNT - Specific Command Data**

The application must poll this bit periodically to see if new Command Data has been received by the module. If new Command Data has arrived, the data must be evaluated by the application. The application can then either choose to accept or reject the received data. This is handled through mailbox commands, see 3-9 “Command Data”.

1: New Command Data received

0: -

- **ADJ - Adjustment Data**

The application must poll this bit periodically to see if new Adjustment Data has been received by the module. If new Adjustment Data has arrived, the data must be evaluated by the application. The application can then either choose to accept or reject the received data. This is handled through mailbox commands, see 3-7 “Adjustment Data”.

1: New Adjustment Data received

0: -

- **CNF - Configuration Data**

The application must poll this bit periodically to see if new Configuration Data has been received by the module. If new Configuration Data has arrived, the data must be evaluated by the application. The application can then either choose to accept or reject the received data. This is handled through mailbox commands, see 3-5 “Configuration Data”.

1: New Configuration Data received

0: -

Fieldbus Type (0x7CC - 0x7CDh)

The fieldbus type value for AnyBus-S FIPIO is 0x0035.

Connectors

Application Connector

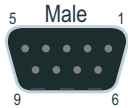
The application connector features a standard AnyBus-S 2kbyte parallel DPRAM interface. (Consult the general AnyBus-S Parallel Design Guide for more information.)

Fieldbus Interface

The module supports both 9-pin D-sub connectors and 2mm board to board connectors on the fieldbus interface.

9-pin D-sub (Male)

Pin	Signal
Housing	PE
1	-
2	-
3	-
4	-
5	-
6	A (D+)
7	B (D-)
8	B (D-)
9	A (D+)



2mm Board to Board

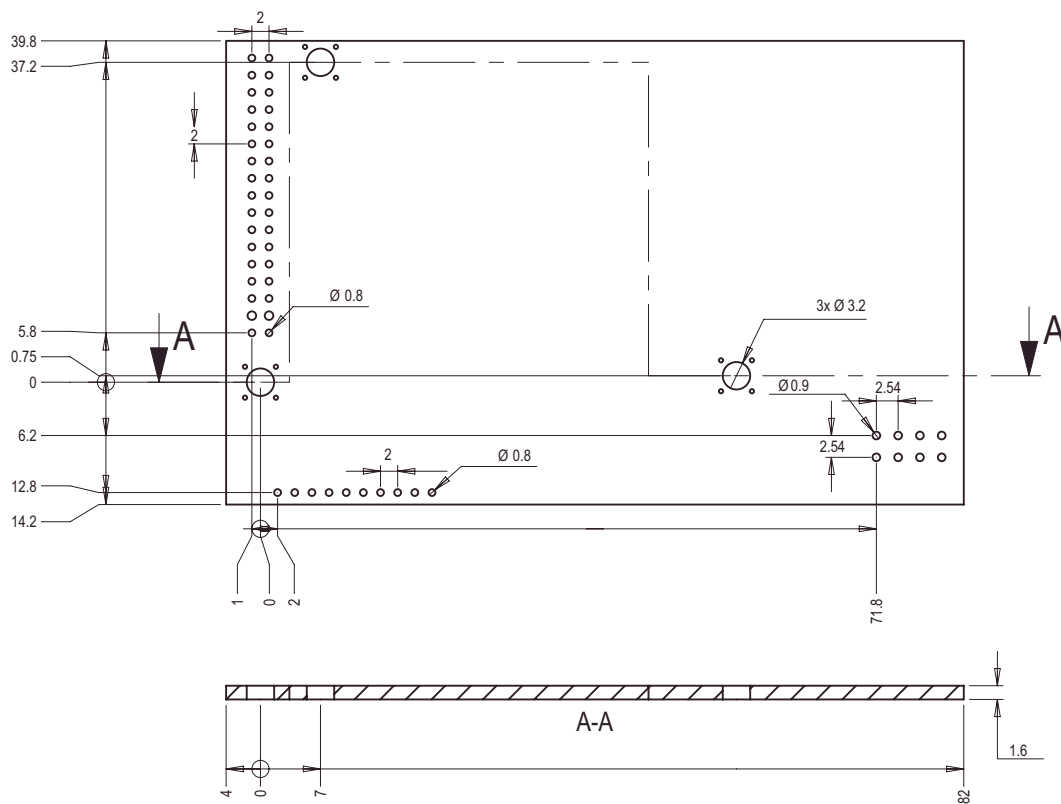
Pin	Signal
1	PE
2	-
3	-
4	A (D+)
5	B (D-)
6	-
7	B (D-)
8	A (D+)
9	-
10	-



Mechanical Specification

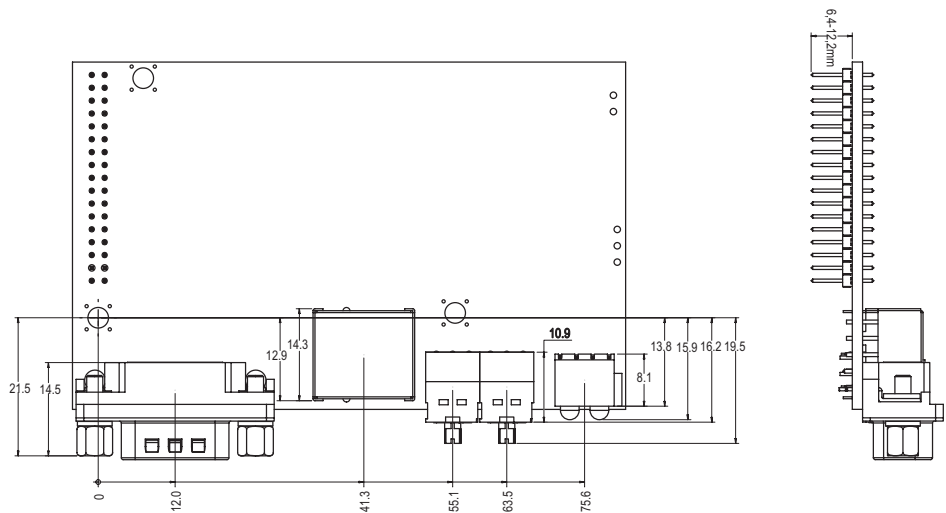
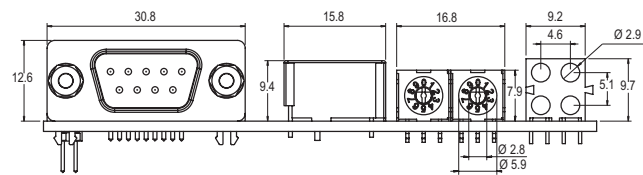
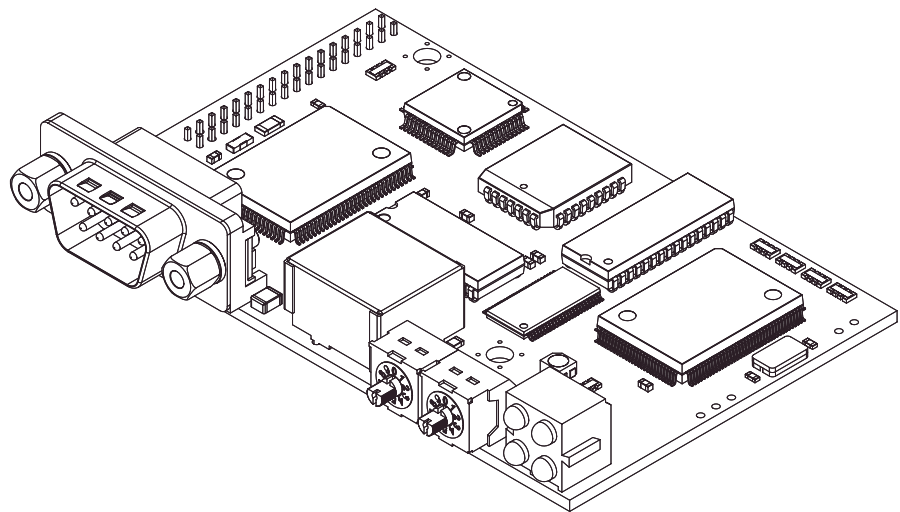
Measurements, PCB

The PCB is designed according to the AnyBus-S specification.



Measurements, Connectors & Switches

Standard Configuration



Electrical Characteristics

Supply Voltage

Both the module electronics and the fieldbus interface requires a regulated 5V DC power supply. For more information regarding power requirements, consult the AnyBus-S Design Guide.

Power Consumption

The total maximum power consumption from the application side is 300mA

Protective Earth

A PE-connection is available on one of the mounting holes according to the AnyBus-S specification.

Environmental Specification

Temperature

Operating

+0 to +70 degrees Celsius

Test performed according to IEC-68-2-1 and IEC 68-2-2.

Non Operating

-15 to +85 degrees Celsius

Test performed according to IEC-68-2-1 and IEC 68-2-2.

Relative Humidity

The product is designed for a relative humidity of 5 to 95% non-condensing.

Test performed according to IEC 68-2-30.

EMC compliance

Emission

According to EN 50 081-2:1993

Tested per 55022:1997, class A, radiated

Immunity

According to EN 61000-6-2:1999

Tested per EN 61000-4-2:1995

EN 61000-4-3:1996

EN 61000-4-4:1995

EN 61000-4-5:1995

EN 61000-4-6:1996

